American Journal of Sports Science
2025, Vol. 13, No. 3, pp. 57-63
https://doi.org/10.11648/j.ajss.20251303.11

Research Article

Effect of 12-week Skill Training Programme on Selected Physical Fitness Indices Among Secondary School Female Football Players in Makurdi, Benue State, Nigeria

Joy Nneoma Akameze[1, *], Andrew Aor Tyoakaa[2], Donatus Udockukwu Chukwudo[3], Francis Chibunine Ugwueze[3]

[1]Department of Sports and Exercise Medical Sciences, School of Sports and Exercise Medicine, University of Health and Allied Sciences, Ho, Ghana

[2]Department of Science and Technology, Vaatia College, Makurdi, Nigeria

[3]Department of Human Kinetics and Health Education, University of Nigeria, Nsukka, Nigeria

Abstract

Female participation in football has grown steadily in Nigeria, yet many young female players lack access to structured training that targets key physical fitness components. Aerobic fitness, agility, and leg power are critical for football performance, but there is limited research on how structured skill training programmes affect these variables in adolescent female athletes. This study investigated the effects of a 12-week skill training programme on aerobic fitness, agility, and leg power among secondary school female football players in Makurdi, Benue State, Nigeria. A quasi-experimental design was employed. The study population included 222 female football players from twelve secondary schools registered for the 2024 all-secondary school games. A purposive sample of 40 players from two intact schools was selected. Aerobic fitness was assessed using the Progressive Aerobic Cardiovascular Endurance Run (PACER) test; agility was measured using the Illinois Agility Test; and leg power was evaluated with a jump test. Data were analyzed using Analysis of Covariance (ANCOVA) at a 0.05 significance level. The 12-week skill training programme significantly improved aerobic fitness and agility ($p < 0.05$). However, the programme did not produce a statistically significant improvement in leg power ($p > 0.05$). The findings suggest that a structured skill training programme can effectively enhance aerobic fitness and agility in female secondary school football players, though additional interventions may be required to improve leg power. It is recommended that football coaches adopt this type of programme with a focus on overall physical and skill development.

Keywords

Aerobic Fitness, Agility, Power, Female, Football, Physical Fitness

[*]Corresponding author: jakameze@uhas.edu.gh (Joy Nneoma Akameze)

Received: 6 June 2025; **Accepted:** 23 June 2025; **Published:** 16 July 2025

1. Introduction

Football is recognized globally as one of the most physically demanding sports, requiring a combination of aerobic endurance, agility, and muscular power to perform at optimal levels. These components are particularly critical for adolescent players, whose physical development significantly influences their skill acquisition and competitive performance. Aerobic fitness, a foundational attribute in football, ensures that players sustain high-intensity efforts throughout matches, promoting better recovery between sprints and minimizing fatigue [1]. Aerobic fitness is crucial for young female football players as it enhances their ability to sustain prolonged periods of high-intensity activity during matches. Higher aerobic capacity allows players to recover faster between repeated sprints, maintain tactical effectiveness, and delay fatigue over the course of a game [2]. Research has shown that improvements in aerobic endurance are directly linked to better performance in intermittent activities critical to football [3]. Progressive aerobic training not only increases players' maximum oxygen uptake (VO_2max) but also improves heart rate recovery, leading to enhanced physical fitness and endurance among young players [4].

Agility which is the ability to change direction rapidly and accurately is equally vital, enabling players to evade opponents, execute strategic plays, and maintain control during dynamic match situations [5]. Superior agility enables players to evade defenders, adjust their positioning quickly, and execute strategic plays with precision [5]. Studies affirm that agility training not only improves movement efficiency but also boosts overall performance, especially in positions demanding frequent and rapid changes in direction [6]. Developing agility at a young age builds a strong neuromuscular foundation that supports the execution of more complex technical skills later in an athlete's career [7].

Furthermore, muscular power, which results from the combination of strength and speed, is crucial for performing explosive actions such as sprinting, jumping for headers, and powerful shooting which are all determinants of success in football [8]. For young female players, early development of muscular power enhances their ability to perform high-intensity plays and increases their competitiveness [8]. Recent findings show that improved lower-body power translates directly to better sprint speeds, jump heights, and overall physical dominance on the pitch [9]. Incorporating structured power development programmes at an early stage is critical, as it builds the physical resilience and explosiveness needed for future high-level competition [10].

Recent studies have emphasized that structured training interventions can significantly enhance these physical attributes, especially when integrated into the regular training regimens of youth football players [6]. Attaining success and reaching the international level in any sport necessitates years of dedicated training and development across multiple aspects, including technical skills, tactical knowledge, mental resilience, and physical prowess, all aligned with the demands of the sport [6]. Football, being dynamic and intense with constant multidirectional movements, demands considerable physical conditioning, strength training, and power development to succeed at the elite level. Athletes lacking these specific qualities may find sustained success difficult to attain.

In Nigeria, despite the growing interest and participation of females in football, there remains a paucity of research focusing on optimizing the physical fitness and skill performance of secondary school female players. Addressing this gap is essential, particularly in regions like Makurdi, Benue State, where structured athletic development programs are limited. Implementing a targeted 12-week skill training programme could serve as a critical intervention to enhance players' aerobic fitness, agility, and power, ultimately improving their football performance and competitiveness. This study, therefore, evaluated the effects of a structured 12-week skill training programme on the aerobic fitness, agility, and leg power of secondary school female football players in Makurdi, Benue State. It is anticipated that the findings will contribute to evidence-based strategies for athletic development and empowerment of female footballers within the Nigerian context.

2. Materials and Methods

2.1. Design and Participants

The study employed a pretest posttest control group quasi-experimental design. The population of the study comprised of all the 222 female secondary school football players from twelve (12) secondary schools that registered for the all-secondary school games in Makurdi in 2024. A total of forty (40) female secondary school football players were used for the study. The sample was drawn from two intact schools namely: Vaatia College Makurdi (20) which served as experimental group and Bright Star Academy (20) which served as the control group. The intact schools were adopted making the research feasible without disrupting the school routine. These schools were randomly selected form the twelve schools that participated in the 2024 all secondary school games in Makurdi, Benue State. This sample size was considered appropriate because, Kirk [11] stated that that smaller sample sizes can still yield reliable results in quasi-experimental research, particularly when participants are grouped based on pre-existing structures, such as classrooms or teams.

2.2. Measures

Aerobic fitness, agility and leg power of the participants were assessed.

2.2.1. Aerobic Fitness

Aerobic fitness was assessed using the Progressive Aerobic Cardiovascular Endurance Run (PACER), a 20-meter shuttle run test validated for field-based aerobic capacity evaluation in youth populations. The protocol followed the guidelines provided by Plowman and Meredith [12]. Two cones and marked lines were placed 20 meters apart, and participants were assigned individual lanes approximately 1-1.5 meters wide. The test was administered using a pre-recorded PACER audio CD that included pacing beeps. Participants were required to run from one line to the other before the next beep sounded, making sure to touch the line. After reaching the opposite end, they paused until the next beep before returning. The pace gradually increased as the test progressed. The test concluded when a participant failed to reach the line before the beep on two consecutive occasions. The final score was the total number of laps completed successfully [12].

2.2.2. Agility

Agility was measured using the Illinois Agility Test (IAT), a widely accepted and validated assessment of change-of-direction speed in sport-specific contexts. The test setup followed the protocol described by Hachana et al. [13]. Four cones were placed to form a rectangle 10 meters long and 5 meters wide, with four additional cones aligned down the center at 3.3-meter intervals. Participants began lying face down behind the start line with their hands placed near the shoulders. On the starting signal, participants rose and navigated the course by sprinting and weaving between the central cones, then sprinting to the finish. Performance was timed with a stopwatch, and faster times indicated superior agility. The IAT has demonstrated high test-retest reliability (ICC = 0.96) and good criterion-related validity in team sport athletes [13].

2.2.3. Muscular Power

Lower-body muscular power was evaluated using the Standing Long Jump (also known as the Broad Jump). Participants began with their toes behind a marked take-off line and their feet shoulder-width apart. Using a two-footed take-off, they jumped forward as far as possible, landing on both feet. The jump distance was measured from the take-off line to the closest point of contact on landing (typically the back of the heels). Each participant was given three trials, and the longest valid jump was recorded as the final score [14].

2.2.4. Procedure

Prior to the commencement of the 12-week intervention program, baseline assessments were conducted for both the experimental and control groups to evaluate aerobic fitness, agility, and leg power. Following the completion of the training program, the same assessments were repeated. This pretest-posttest design enabled comparison of the physical performance changes between the experimental group, which received the skill-based training intervention, and the control group, which maintained routine activities without structured skill training.

The 12-week intervention was conducted three days a week—Tuesdays, Thursdays, and Saturdays—from 5:00 p.m. to 6:15 p.m., with each session structured to include a warm-up, targeted skill drills, rest intervals, and cool-down exercises. The program was designed to develop fundamental football skills including passing, shooting, dribbling, trapping, heading, and throw-ins, while also integrating game simulation to enhance tactical awareness. Training content was adapted from existing instructional frameworks [15, 16].

On Tuesdays, each session began with a 10-minute warm-up comprising general mobility drills and sport-specific dynamic stretching. The main workout segment included 14 minutes of passing drills such as ground passes for accuracy and cone-based directional passing, followed by 13 minutes focused on transitioning from short passes to longer-range distribution. After a 4-minute rest interval, shooting drills were introduced, beginning with 12 minutes of shooting stationary balls for accuracy, and followed by 12 minutes of pass-and-shoot or turn-and-shoot activities designed to simulate match scenarios. Sessions concluded with a 10-minute cool-down consisting of static and dynamic stretching routines to aid recovery.

Thursday sessions followed a similar structure. The initial 10-minute warm-up was followed by 27 minutes of dribbling-focused drills. These included zigzag and suicide dribbling to enhance ball control and agility, as well as figure-eight patterns and 1v1 controlled scoring tasks to simulate pressure situations. The workout continued with 24 minutes of trapping drills, such as receiving rolling balls, controlling aerial passes, and mastering throw-in receptions. A 4-minute rest period was interspersed between drill sets. The session closed with a 10-minute cool-down to improve flexibility and reduce muscle stiffness.

Saturdays were devoted to aerial ball control and game integration. After a 10-minute warm-up, players engaged in 14 minutes of heading drills—such as “Heading in 3,” run-in headers, and throw-head-catch routines—to develop timing and aerial strength. This was followed by 12 minutes of throw-in drills, focusing on both short and long delivery techniques. Following a brief 4-minute rest, players participated in a 30-minute game simulation, allowing them to apply learned skills in a controlled match-play environment. Each session ended with a 5-minute cool-down to facilitate recovery. This structured schedule was designed to balance technical skill acquisition with progressive physical conditioning, supporting the development of football-specific abilities in adolescent female players.

2.2.5. Statistical Analysis

To test the hypotheses, Analysis of Covariance (ANCOVA) was employed to assess differences in the posttest mean values of the dependent variables while statistically controlling

for pretest scores as covariates. This approach accounts for the influence of the pre-intervention values, thereby providing a more accurate estimation of the effect of the training intervention on the outcome measures. ANCOVA adjusts for both controlled and potential uncontrolled confounding variables, enhancing the internal validity of the analysis. Effect sizes were computed using partial eta squared (η^2_p) to determine the magnitude of the observed effects. These were interpreted following Cohen's conventional thresholds: small ($\eta^2_p = 0.01$), medium ($\eta^2_p = 0.06$), and large ($\eta^2_p = 0.14$) [17]. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSS), Version 21 (IBM Corp., Armonk, NY, USA). A significance level of $\alpha = 0.05$ was adopted, with p-values less than 0.05 considered statistically significant.

3. Results

Table 1. *ANCOVA of Effect of 12-Week Skill Training Programme on the Aerobic Fitness of Secondary School Female Football Players in Makurdi.*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1173.334[a]	2	586.667	323.661	.000	.946
Intercept	29.013	1	29.013	16.007	.000	.302
Pre_PACER.in.Laps	270.834	1	270.834	149.418	.000	.802
Groups	130.632	1	130.632	72.069	.000	.661
Error	67.066	37	1.813			
Total	45330.000	40				
Corrected Total	1240.400	39				

The result in Table 1 revealed a statistically significant effect of the training programme on posttest PACER scores, $F(1, 37) = 72.07$, $p < 0.001$, after adjusting for pretest differences. The effect size, as measured by partial eta squared ($\eta^2_p = 0.661$), indicates a large effect according to Cohen's criteria, suggesting that a substantial proportion of the variance in aerobic fitness improvement can be attributed to the training intervention. The covariate (pretest PACER scores) was also a significant predictor, $F(1, 37) = 149.42$, $p < 0.001$, indicating its relevance in the model. These findings demonstrate that the skill training programme had a meaningful and statistically significant impact on the aerobic fitness of the participants.

Table 2. *ANCOVA of Effect f 12-Week Skill Training Programme on the Agility of Secondary School Female Football Players in Makurdi.*

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	130.059[a]	2	65.029	77.826	.000	.808[a]
Intercept	7.760	1	7.760	9.287	.004	.201
Pre_Agility.Test	59.834	1	59.834	71.609	.000	.659
Groups	93.084	1	93.084	111.402	.000	.751
Error	30.916	37	.836			
Total	9191.000	40				
Corrected Total	160.975	39				

Result in Table 2 revealed a statistically significant effect of the 12-week skill training programme on agility among secondary school female football players in Makurdi, after controlling for pretest scores on the agility test, $F(1, 37) = 111.40$, p

< 0.001, partial $\eta^2 = 0.751$. This large effect size suggests that the training programme accounted for approximately 75.1% of the variance in posttest agility performance between the groups, indicating a substantial practical impact. The pretest score was also a significant covariate, $F(1, 37) = 71.61$, $p < 0.001$, partial $\eta^2 = 0.659$, demonstrating a strong relationship between pre- and post-intervention agility performance. The overall model was statistically significant, $F(2, 37) = 77.83$, $p < 0.001$, partial $\eta^2 = 0.808$.

Table 3. *ANCOVA of Effect of 12-Week Skill Training Programme on the Power of Secondary School Female Football Players in Makurdi.*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2123.690[a]	2	1061.845	216.096	.000	.921[a]
Intercept	60.469	1	60.469	12.306	.001	.250
Pre_Power_SBJ_.in.cm	2087.590	1	2087.590	424.845	.000	.920
Groups	19.122	1	19.122	3.892	.056	.095
Error	181.810	37	4.914			
Total	966408.000	40				
Corrected Total	2305.500	39				

The results, presented in Table 3, indicated that after adjusting for pretest power scores, there was no statistically significant difference in posttest power scores between the experimental and control groups, $F(1, 37) = 3.892$, $p = 0.056$, partial $\eta^2 = 0.095$. Although the effect did not reach statistical significance at the $\alpha = 0.05$ level, the effect size suggests a moderate practical effect according to Cohen's (1988) guidelines.

4. Discussion

The present study demonstrated a statistically significant improvement in aerobic fitness among secondary school female football players following a 12-week skill training programme ($p < 0.05$). This finding reinforces existing evidence that prolonged, structured, and sport-specific training can positively impact aerobic capacity. Notably, this aligns with the systematic review by Ramirez-Campillo et al. [18], which concluded that obstacle-based and sport-relevant training programs lasting six weeks or more effectively enhance cardiorespiratory endurance. Similarly, Nikolaidis et al. [19] reported improvements in aerobic performance with consistent, sport-specific interventions in young athletes. The uniqueness of the present study lies in its application to a population that is often underrepresented in performance-based research—female football players at the secondary school level in Nigeria. By demonstrating that skill-oriented training can elicit significant cardiovascular adaptations in this group, the findings underscore the value of integrating such programmes in youth female football development, particularly in resource-constrained settings. The observed improvement may be attributed to physiological adaptations such as increased stroke volume, improved oxygen transport efficiency, and enhanced oxidative metabolism.

In addition to aerobic fitness, the study revealed a significant improvement in agility among the experimental group. This finding is consistent with previous research indicating the efficacy of skill-based training in improving agility. Kassahun and Mesele [20] reported significant enhancements in agility among young male football players following skill-specific training, while Ahmet [21] and Akhtar and Muleta [22] observed similar improvements in varied age groups and contexts. Moreover, Kodeeswaran and Murugavel [23] highlighted that position-specific training tailored to in-game movements significantly boosted agility in school-level athletes. These findings corroborate the results of the present study and further validate the importance of designing training programs that reflect the multifaceted demands of soccer, including rapid directional changes, decision-making under pressure, and sport-specific movement patterns. The consistent finding across studies strengthens the argument for agility as a trainable and responsive component through targeted technical drills.

Conversely, the current study found no statistically significant effect of the 12-week skill training programme on lower-body power, as measured by the standing broad jump ($p > 0.05$). While this outcome may appear inconsistent with the observed improvements in other fitness parameters, it highlights an important distinction in training specificity. The result supports the findings of Lesinski et al. [24], who concluded that general skill-based or technical training may not be sufficient to elicit meaningful improvements in explosive power without concurrent strength or plyometric components. Similarly, Suchomel et al. [25] emphasized the importance of

incorporating high-intensity resistance and velocity-based training to target the neuromuscular adaptations required for power development. The lack of a significant effect on power in this study suggests that the implemented training programme, though effective for aerobic fitness and agility, did not include sufficient intensity or loading parameters to stimulate improvements in muscular power. This underlines the need for a more integrative approach in youth football training, where skill development is complemented with neuromuscular conditioning protocols to enhance performance across all key domains.

5. Conclusions

This study demonstrated that a 12-week skill training programme had a significant positive effect on selected components of physical fitness, specifically aerobic fitness and agility, among secondary school female football players in Makurdi, Benue State, Nigeria. However, the programme did not produce a statistically significant improvement in muscular power, despite a moderate effect size being observed. These findings underscore the value of structured and targeted skill training interventions in enhancing specific fitness attributes relevant to football performance in female athletes. The results have important implications for coaches, physical educators, and sports scientists in the design of training protocols aimed at optimizing athletic performance in female youth populations. To achieve more comprehensive fitness improvements, future training programmes should incorporate plyometric and resistance-based power drills specifically targeting lower-limb explosiveness. Additionally, longitudinal studies are recommended to assess the sustained effects of skill training over multiple seasons. Further research could also compare the effectiveness of different training modalities (e.g., small-sided games, circuit training, or high-intensity interval training) and explore gender-based responses to similar interventions. Expanding the sample size and including players from different regions would enhance the generalizability of the findings. Lastly, evaluating psychological and tactical outcomes alongside physical fitness could provide a more holistic understanding of how skill training impacts youth football development.

Abbreviations

PACER	Progressive Aerobic Cardiovascular Endurance Run
IAT	Illinois Agility Test
ANCOVA	Analysis of Co-variance

Acknowledgments

We wish to thank the participants for their efforts and consistency throughout the study.

Author Contributions

Joy Nneoma Akameze: Formal Analysis, Methodology, Resources, Validation, Writing - review & editing

Andrew Aor Tyoakaa: Conceptualization, Writing – original draft

Donatus Udochukwu Chukwudo: Data curation, Investigation, Supervision

Francis Chibunine Ugwueze: Writing - review & editing

Funding

This research received no external funding.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Nigeria and approved by the Benue Football Federation (BFA) in conjunction with the Nigeria Football Federation (NFF).

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Data are available upon reasonable request from the authors.

Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Komarudin, K.; Suharjana, S.; Yudanto, Y.; Kusuma, M. N. H. The different influence of speed, agility and aerobic capacity toward soccer skills of youth player. *Pedagogy of Physical Culture and Sports* 2022, *26*(6), 381-390. https://doi.org/10.15561/26649837.2022.0604

[2] Çobaj, J.; Mara, F.; Golemi, V. The importance of VO_2 max in young soccer players. *Arena - Journal of Physical Activities* 2024, *12*, 156-163. https://doi.org/10.62591/ajpa.2023.12.13

[3] Bayrakdaroğlu, S.; Arı, E.; Özkamçı, H.; Can, İ. The examination of Yo-Yo intermittent recovery test performance of young soccer players at different playing positions. *Physical Education of Students* 2020, *24*(4), 235-241. https://doi.org/10.15561/20755279.2020.0406

[4] Rahima, R.; Susanto, H.; Flora, R.; Bahrudin, U.; Sukendro, S. Progressive training program improves aerobic capacity and physical fitness in student soccer athletes. *Eduvest - Journal of Universal Studies* 2025, *5*(1), 121-131. https://doi.org/10.59188/eduvest.v5i1.50306

[5] Kilit, B.; Chmura, P.; Arslan, E.; Soylu, Y.; Radziminski, Ł. Effects of 2 combined training protocols on the aerobic and anaerobic fitness, technical skills, and psychophysiological responses in young soccer players. *Journal of Strength and Conditioning Research* 2024, in press. https://doi.org/10.1519/JSC.0000000000004955

[6] Mossa, M. E. The effect of core strength training on 14-year-old soccer players' agility, anaerobic power, and speed. *American Journal of Sports Science* 2022, *10*(1), 24-28. https://doi.org/10.11648/j.ajss.20221001.14

[7] Silva, Y.; De Souza Vale, R.; Da Silva, G.; Santos, A.; De Castro, J.; Da Silva, I.; Lima, V.; De Alkmim Moreira Nunes, R. Physical performance in young female football athletes: A systematic review. *Cuerpo, Cultura y Movimiento* 2024. https://doi.org/10.15332/2422474x.9861

[8] Philip, E. C.; Pulicken, R. J.; N, R.; Alwin, C.; Baby, R. E. Effect of functional training on speed, agility, explosive power, and aerobic endurance in recreational soccer players. *International Journal of Physiotherapy and Research* 2022, *10*(2), 4162-4169. https://doi.org/10.16965/ijpr.2022.109

[9] Beato, M.; Datson, N.; Anderson, L.; Brownlee, T.; Coates, A.; Hulton, A. Rationale and practical recommendations for testing protocols in female soccer: A narrative review. *Journal of Strength and Conditioning Research* 2023, *37*(9), 1912-1922. https://doi.org/10.1519/JSC.0000000000004509

[10] Nilesh, A. Effect of circuit training program on motor fitness components and skill abilities of under-19 football players. *International Journal of Science and Research (IJSR)* 2023, *12*(3), 127-133. https://doi.org/10.21275/sr23302210033

[11] Kirk, R. E. *Experimental Design: Procedures for the Behavioral Sciences*, 4th ed.; SAGE Publications: Thousand Oaks, CA, USA, 2013. https://methods.sagepub.com/book/experimental-design

[12] Plowman, S. A.; Meredith, M. D., Eds. *Fitnessgram/Activitygram Reference Guide*, 4th ed.; The Cooper Institute: Dallas, TX, USA, 2013.

[13] Hachana, Y.; Chaabène, H.; Nabli, M. A.; Attia, A.; Moualhi, J.; Farhat, N.; Elloumi, M. Test-retest reliability, criterion-related validity, and minimal detectable change of the Illinois agility test in male team sport athletes. *Journal of Strength and Conditioning Research* 2013, *27*(10), 2752-2759. https://doi.org/10.1519/JSC.0b013e3182890ac3

[14] Topend Sports. 50 meter dash. Available online: https://www.topendsports.com/testing/tests/ (accessed on [insert access date]).

[15] Sharma, D.; Rawat, J. S. Constructions of objective skills test battery in soccer. *International Journal of Yogic, Human Movement and Sports Sciences* 2018, *3*(1), 1177-1183.

[16] Education and Sports Ertheo. *The Football MVP Handbook: 20 Simple and Effective Soccer Drills to Improve Dribbling, Passing, Shooting, Ball Control, Speed and Agility*; Ertheo, 2001. Available online: https://www.ertheo.com/blog/wp-content/uploads/2016/10/FOOTBALL-MVP-HANDBOOK-Ertheo-Education-Sports.pdf (accessed on [insert access date]).

[17] Cohen, J. *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed.; Erlbaum: Hillsdale, NJ, USA, 1988.

[18] Ramirez-Campillo, R.; Gentil, P.; Negra, Y.; Moran, J. Effects of plyometric jump training in female soccer players' physical fitness: A systematic review with meta-analysis. *International Journal of Environmental Research and Public Health* 2020, *17*(23), 8911. https://doi.org/10.3390/ijerph17238911

[19] Nikolaidis, P. T.; Knechtle, B.; Clemente, F. M.; Torres-Luque, G. Associations between physical status and training load in women soccer players. *International Journal of Environmental Research and Public Health* 2021, *18*(19), 10015. https://doi.org/10.3390/ijerph181910015

[20] Kassahun, W. M.; Mesele, K. B. Effects of twelve weeks resistance training on physical performance of young football players of Dessie City, Amhara Region, Ethiopia. *Abyssinia Journal of Science and Technology* 2020, *5*(2), 22-28.

[21] Ahmet, A. Comparison of certain physical and performance parameters of young football players based on positions. *Journal of Educational Issues* 2021, *7*(1), 458-468.

[22] Akhtar, B.; Muleta, A. E. Contributions of 12 weeks passing, receiving, and dribbling drills to agility of Jimma University Under-13 female football trainees. *Journal of Positive School Psychology* 2022, *6*(5), 4222-4228.

[23] Kodeeswaran, N.; Murugavel, K. Effects of position wise specific skill training on physical and functional variables of football players. *EPRA International Journal of Multidisciplinary Research (IJMR)* 2024, *4*, 2455-2560. https://doi.org/10.36713/epra2013

[24] Lesinski, M.; Prieske, O.; Helm, N.; Granacher, U. Effects of soccer training on anthropometry, body composition, and physical fitness during a soccer season in female elite young athletes: A prospective cohort study. *Frontiers in Physiology* 2020, *8*, 1093. https://doi.org/10.3389/fphys.2017.01093

[25] Suchomel, T. J.; Nimphius, S.; Stone, M. H. The importance of muscular strength in athletic performance. *Sports Medicine* 2018, *48*(4), 765-785. https://doi.org/10.1007/s40279-018-0862-z